

# RI Drought Steering Committee Meeting NWS Update

National Weather Service Boston/Norton MA  
October 22, 2020



# Drought Indices From *Rhode Island Water 2030* Document

Table 2, Rhode Island Drought Indices and Phases

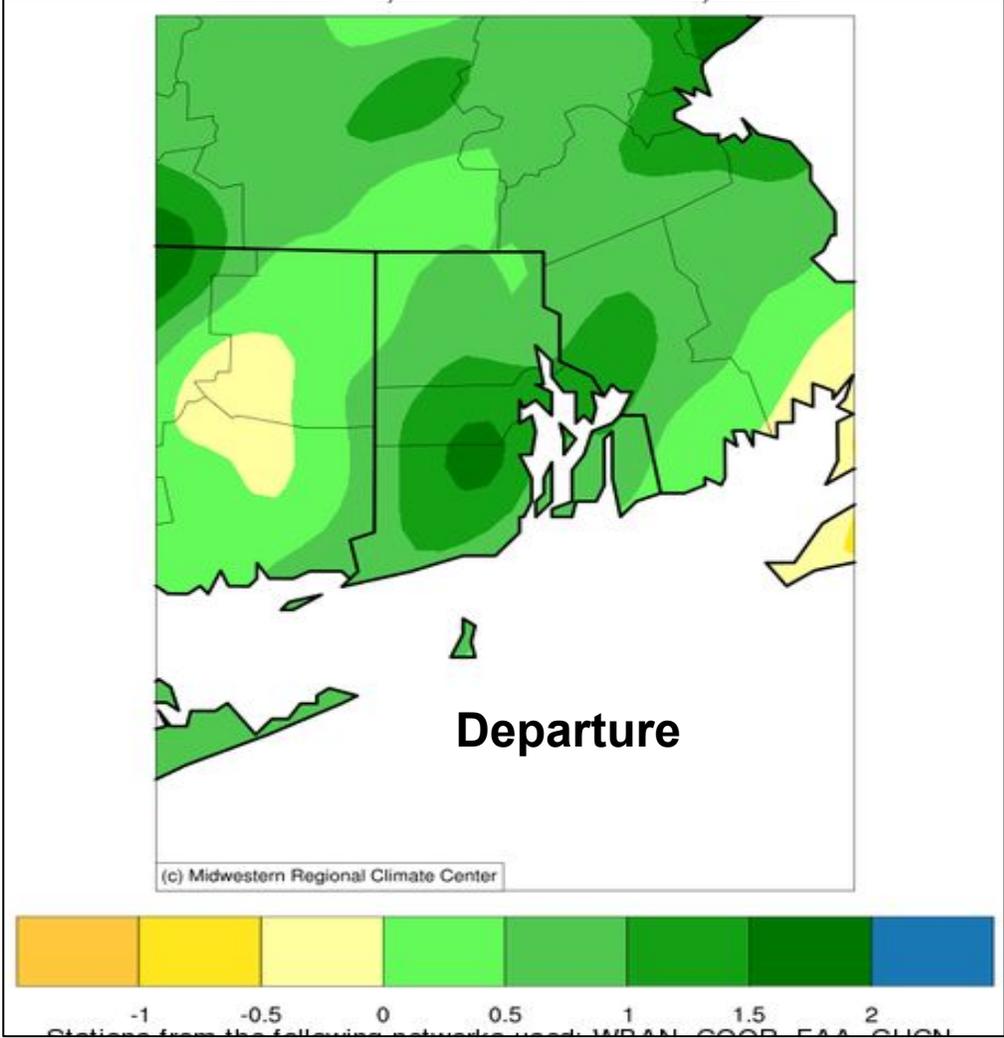
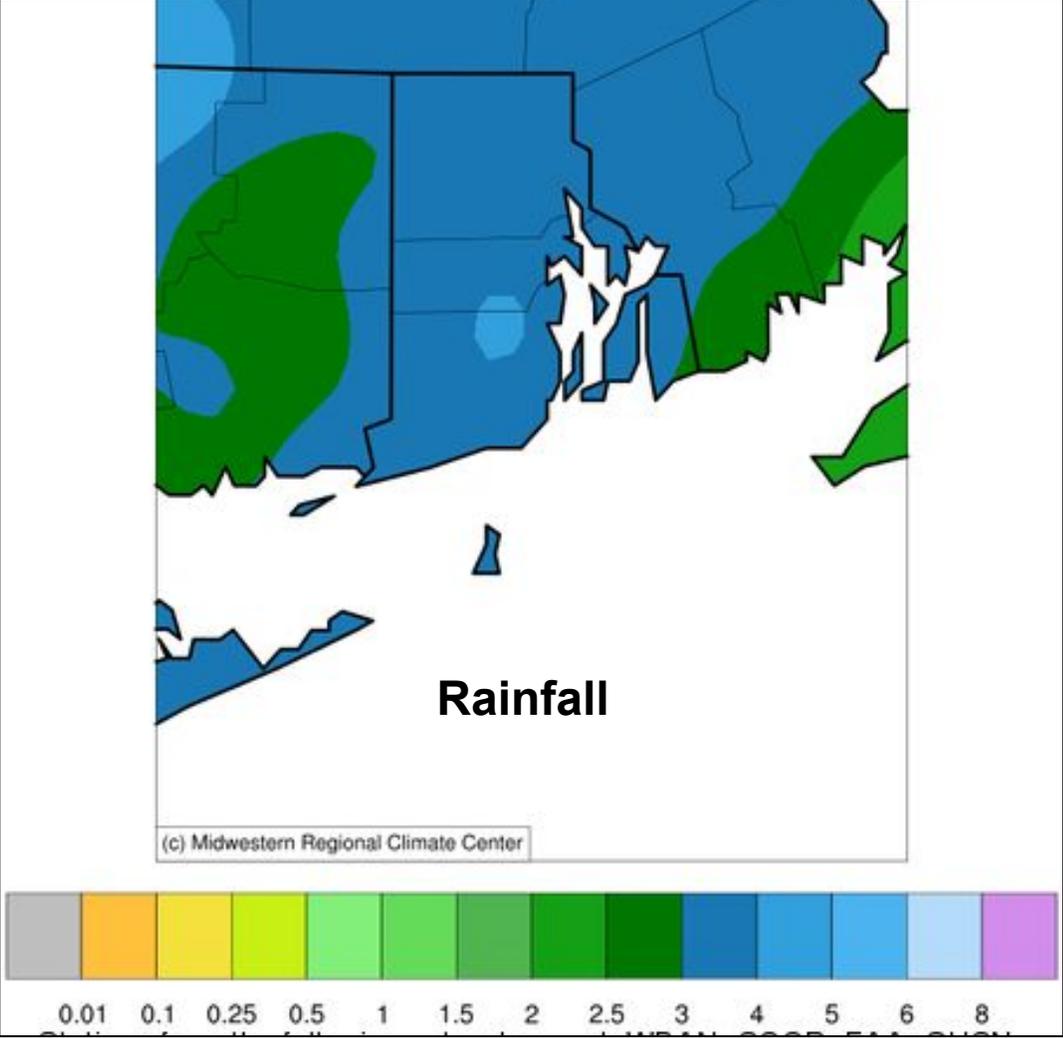
Drought Phase	Palmer Drought Index +	Crop Moisture Index	Precipitation +	Ground Water** +	Stream flow +	Reservoirs**
<b>Normal</b>	-1.0 to -1.99	0.0 to -1.0	Slightly Dry	1 month below normal 1 month below normal	2 consecutive months below normal	Reservoir levels at or near normal for the time of year
<b>Advisory</b>	-2.0 to -2.99	-1.0 to -1.9 Abnormally Dry	2 month cumulative below 65% of normal	At least 2 out of 3 months below normal	3 consecutive months below normal	Small index Reservoirs below normal
<b>Watch</b>	-3.0 to -3.99	-2.0 to -2.9 Excessively Dry	1 of the following criteria met: 3 month cum. <65% or 6 month cum. <70% or 12 month cum. <70%	4-5 consecutive months below normal	At least 4 out of 5 consecutive months below normal	Medium index Reservoirs below normal
<b>Warning</b>	-4.0 and below	> -2.9 Severely Dry	2 out of 3 of the above criteria met: 3 month cum. <65% and 6 month cum. <65% or 6 month cum. <65% and 12 month cum. <65% or 3 month cum. <65% and 12 month cum. <65%	6-7 consecutive months below normal observation wells recording monthly record lows	At least 6 out of 7 consecutive months below normal	Large index reservoirs below normal
<b>Emergency</b>	-4.0 and below	> -2.9 Severely dry	Same criteria as Warning and Previous month was Warning or Emergency	>7 months below normal Observation wells recording monthly record lows	>7 months below normal	Continuation of previous month's conditions

+ Major Hydrologic Indicators.

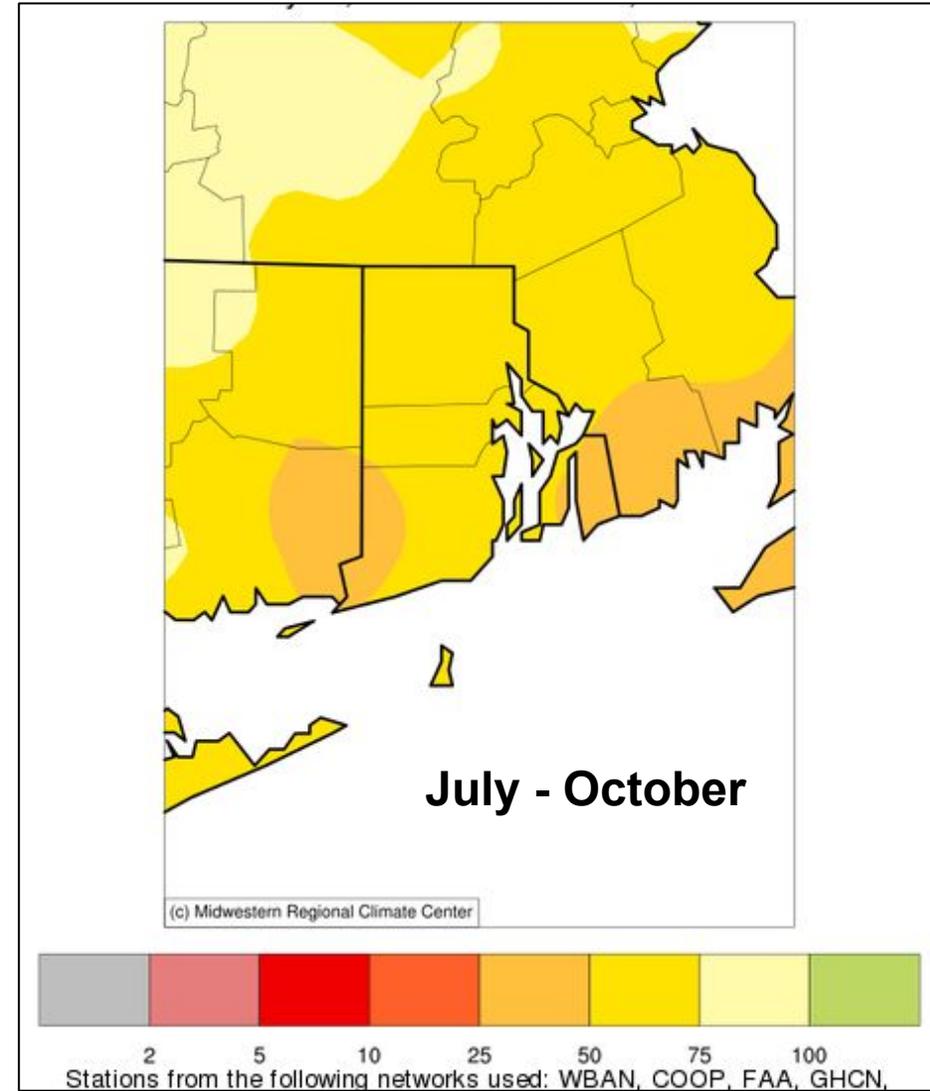
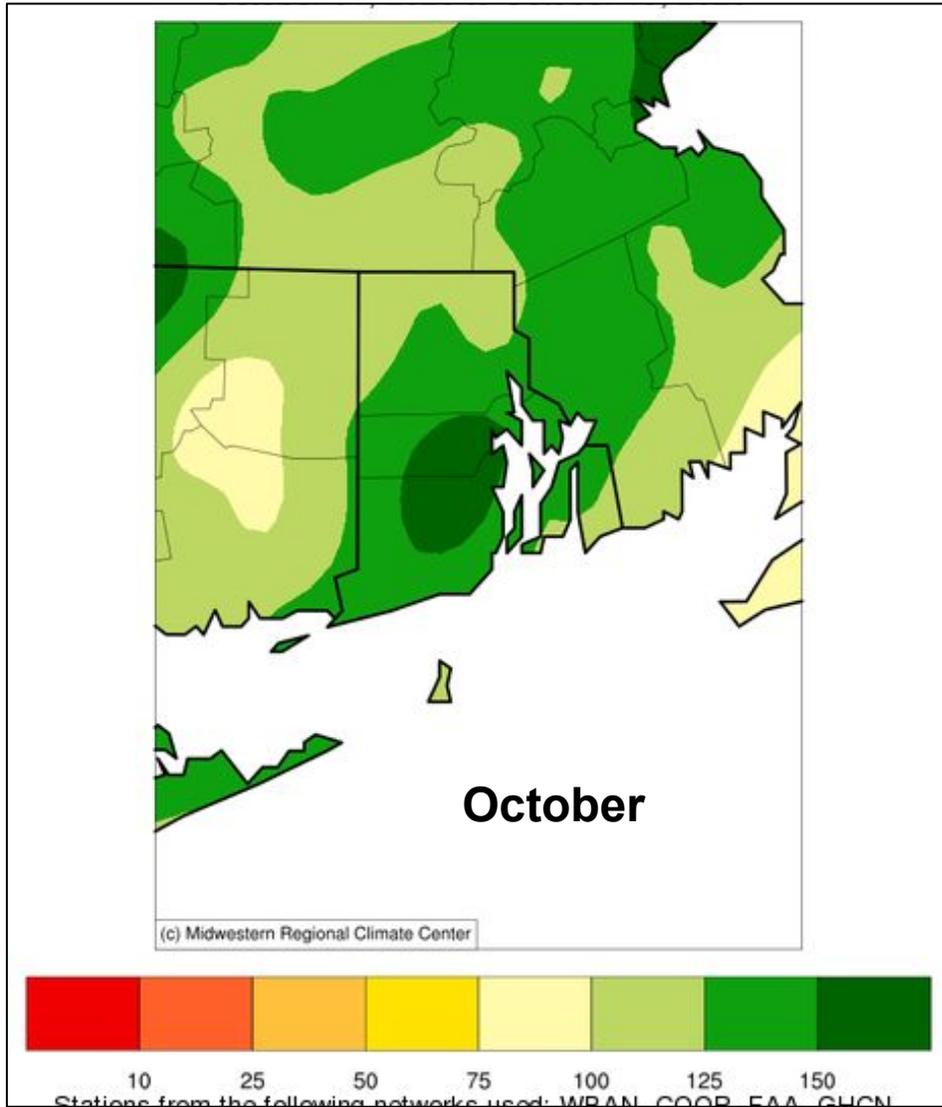
\*\* Local triggers from the water system supply management plans will also be considered in assessing drought phases on a regional basis. The WRB staff will review local plans and work with suppliers to coordinate regarding drought phases and to collect, review and report surface reservoir and ground water data.

"Normal" is defined as the statistical average of the data for the period of record. Percentages for precipitation are relative to normal.

# October 1-19, 2020 Rainfall and Departure



# Oct MTD and Jul-Oct MTD Percent of Normal



# Oct (MTD) and Sep-Oct Rainfall by Region

Oct-20						
Rainfall	Departure	Percent of	Normal Oct 1-19		Full Oct Normal	Region
3.27	0.35	112	2.92	Northwest	4.77	Northwest
3.40	0.55	119	2.85	Northeast	4.65	Northeast
3.71	0.98	136	2.73	Central West	4.45	Central West
3.66	1.25	152	2.41	Central East	3.93	Central East
3.30	0.89	137	2.41	Eastern	3.93	Eastern
3.80	1.19	146	2.61	Southern	4.26	Southern
3.87	1.26	148	2.61	New Shoreham	4.26	New Shoreham
2 month	Dep	Percent	Normal			
4.52	-2.49	64	7.01	Northwest		
4.49	-2.30	66	6.79	Northeast		
4.78	-1.93	71	6.71	Central West		
4.94	-1.39	78	6.33	Central East		
4.34	-1.80	71	6.14	Eastern		
4.88	-1.95	71	6.83	Southern		
5.85	-0.98	86	6.83	New Shoreham		

**Drought Advisory:**  
*Corresponding Drought Phase for 2 months*  
*<65% of normal:*  
**Only Northwest**



# 3 and 6-Month Rainfall by Region

3 month	Dep	Percent	Normal	
6.88	-4.46	61	11.34	Northwest
6.49	-4.43	59	10.92	Northeast
6.82	-3.91	64	10.73	Central West
6.58	-3.35	66	9.93	Central East
5.96	-3.98	60	9.94	Eastern
6.29	-4.90	56	11.19	Southern
8.82	-2.37	79	11.19	New Shoreham
6 month	Dep	Percent	Normal	
15.37	-8.29	65	23.66	Northwest
15.28	-7.44	67	22.72	Northeast
14.00	-8.26	63	22.26	Central West
14.39	-6.02	71	20.41	Central East
12.08	-8.17	60	20.25	Eastern
14.54	-8.54	63	23.08	Southern
14.87	-8.21	64	23.08	New Shoreham

## Drought Watch

Corresponding Drought Phase for 3 months  
<65% of normal

***All but Central East and New Shoreham***

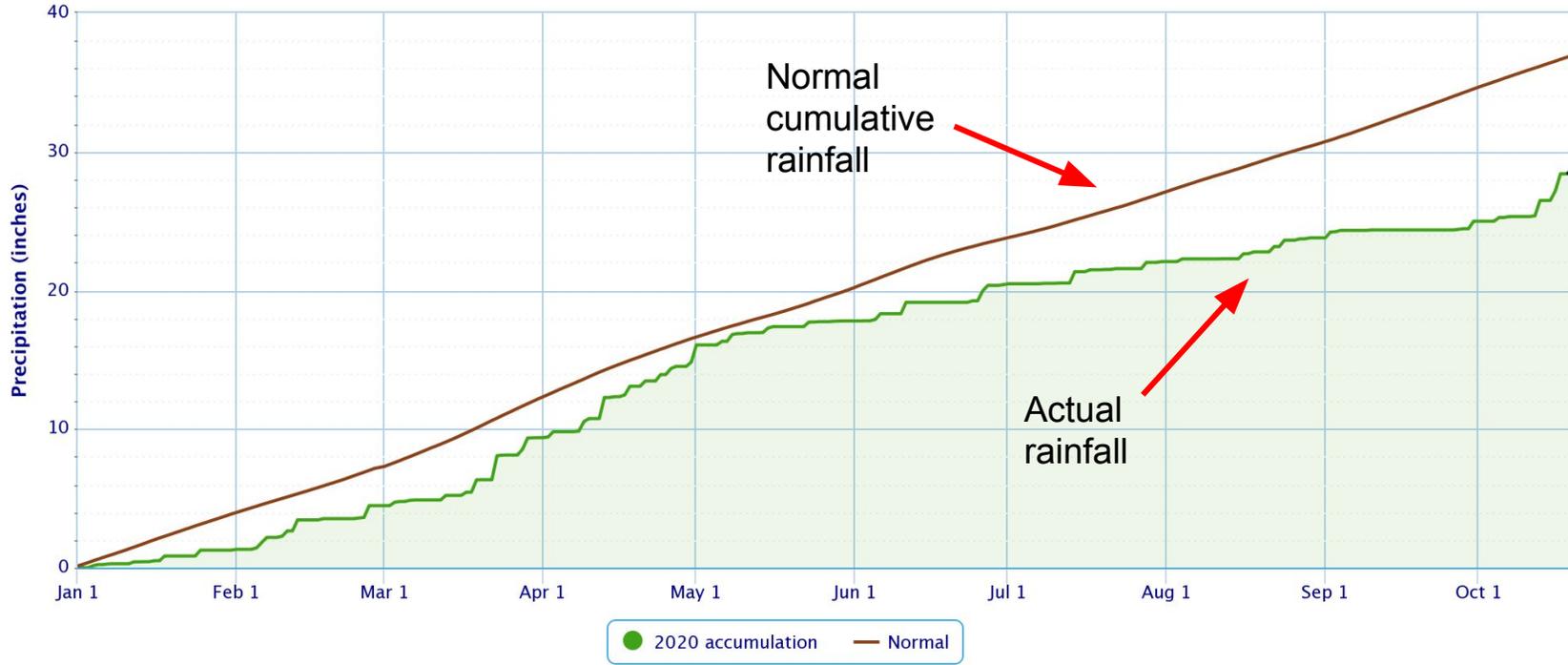
## Drought Warning

criteria (3 and 6 month <65% of normal):

***Central West, Eastern, and Southern***

### Accumulated Precipitation – Providence Area, RI (ThreadEx)

Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



### 2020 Year-to-date precipitation for Providence/TF Green.

Total rainfall from 1/1/20-10/19/20: **28.40"**

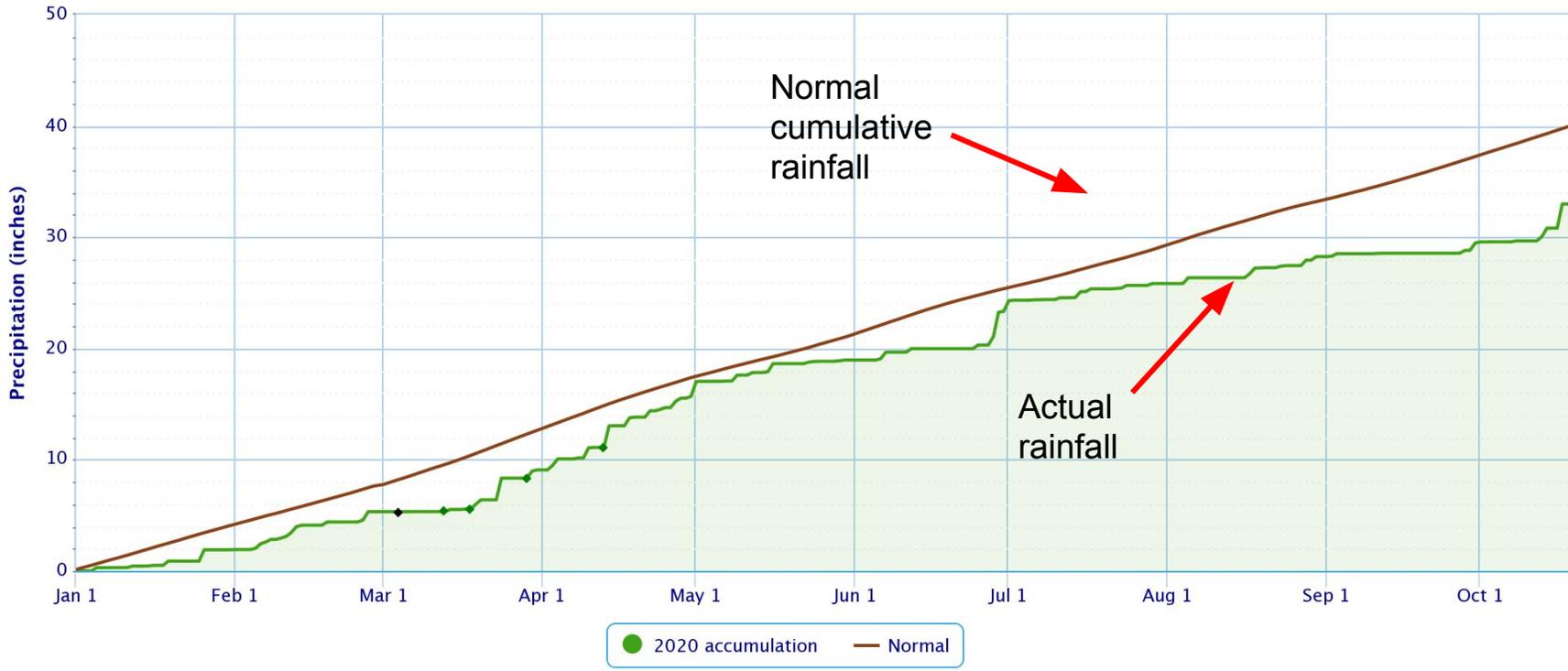
Departure from normal: **-8.50"**

**Drier than normal weather started in June and persists into October.**



### Accumulated Precipitation – WOONSOCKET, RI

Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



### 2020 Year-to-date precipitation for Woonsocket

Total rainfall from 1/1/20-10/19/20: **32.98"**

Departure from normal: **-7.08"**

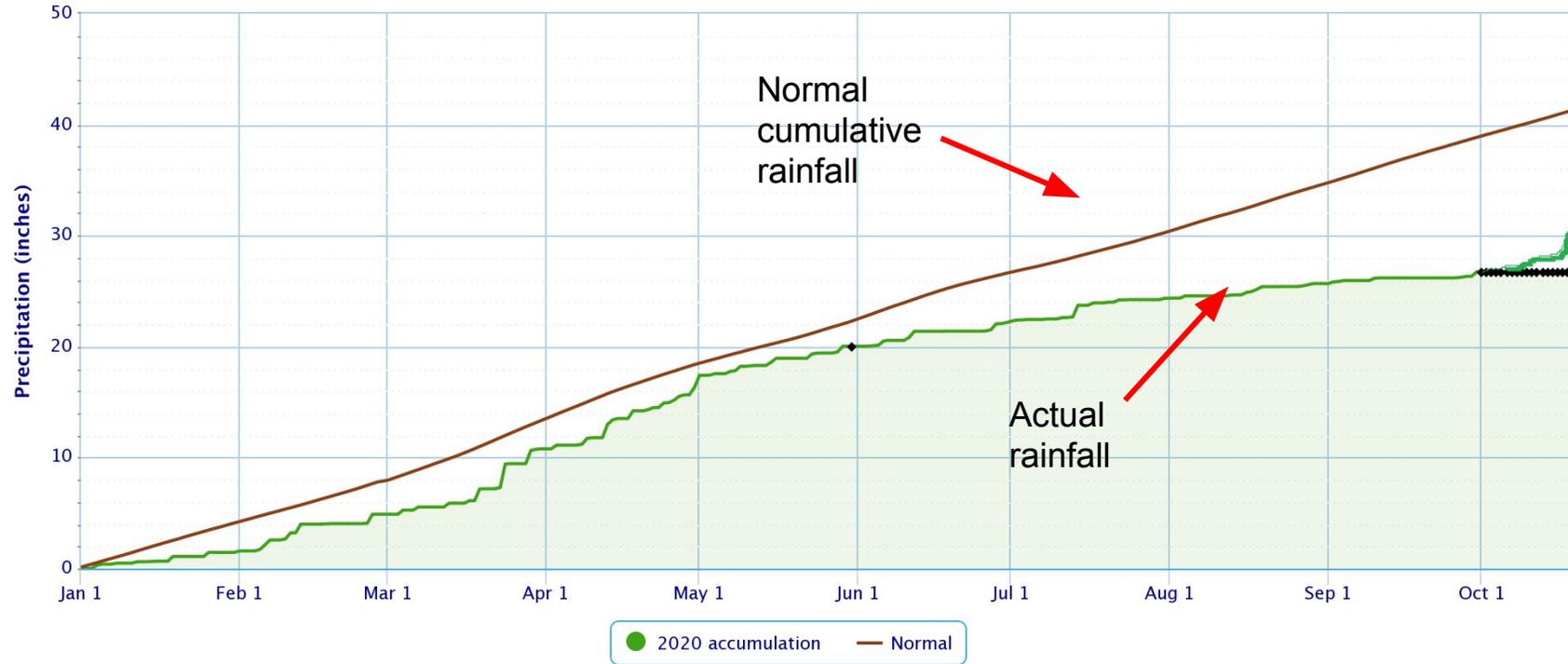
**Thunderstorms brought rainfall in June and early July but drier than normal weather prevailed since the summer.**

Powered by ACIS



### Accumulated Precipitation – KINGSTON, RI

Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



### 2020 Year-to-date precipitation for Kingston

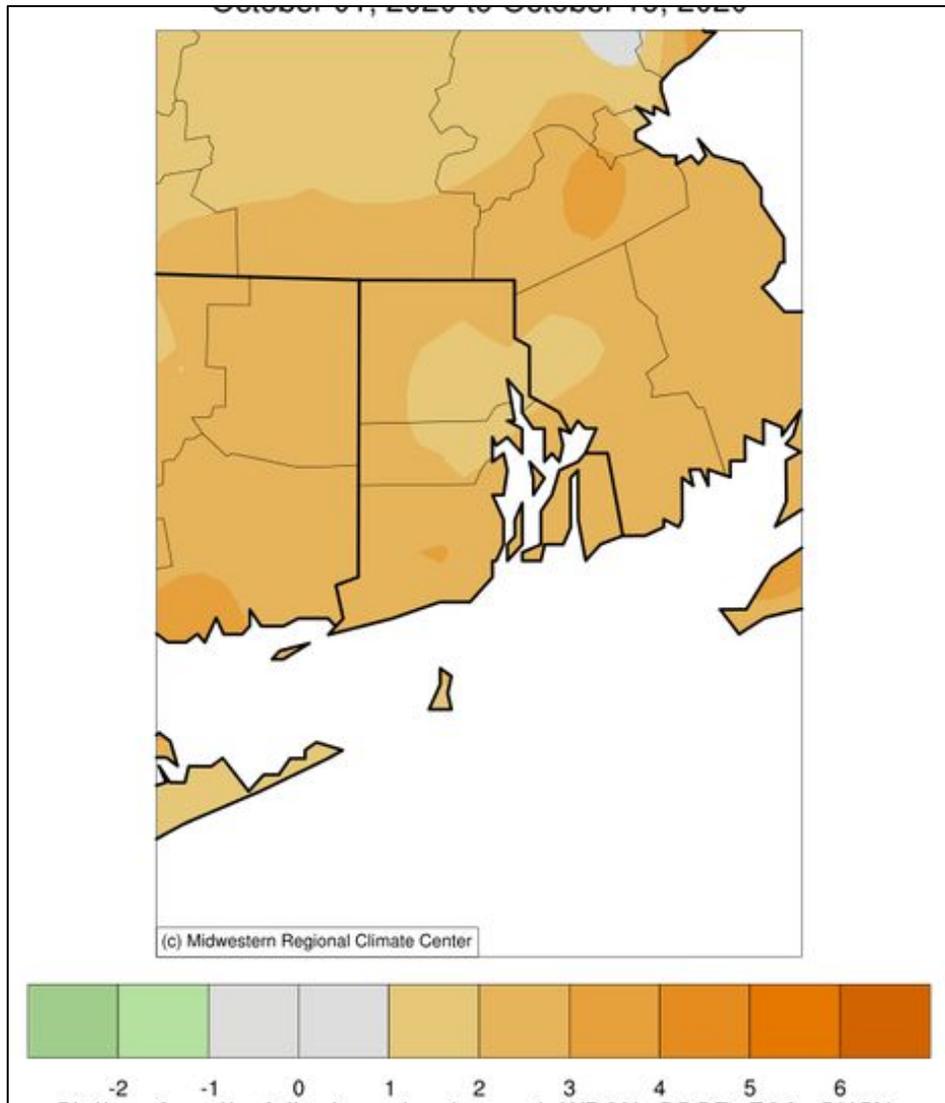
Total rainfall from 1/1/20-10/19/20:  
**30.88"**

Departure from normal:  
**-10.18"**

**Drier than normal weather started in June and persists into October.**



# Temperature Departure from Normal



So far in October, temperatures are averaging above normal throughout the state.

Providence/TF Green: **+1.6** degrees

Woonsocket: **+2.0** degrees

Newport: **+0.5** degrees

Download: [XML](#)  View Period (Months): [All](#) 1 2 3 4 5 6 7 8 9 10 11 12 18 24 36 48 60

## Rankings for driest period on record for Rhode Island:

The 3-month period from July through September was the driest on record.

The 2-month period for August and September, and the 4-month period from June through September, was the 2nd driest on record.

Record Driest	Bottom 1/10	Bottom 1/3	Normal	Top 1/3	Top 1/10	Record Wettest
PERIOD	VALUE	1901-2000 MEAN	ANOMALY	RANK (1895-2020)	WETTEST/DRIEST SINCE	RECORD
September 2020 1-Month	1.08" (27.43mm)	3.61" (91.69mm)	-2.53" (-64.26mm)	11th Driest 116th Wettest	Driest since: 2014 Wettest since: 2019	1941 2008
Aug-Sep 2020 2-Month	2.85" (72.39mm)	7.66" (194.56mm)	-4.81" (-122.17mm)	2nd Driest 125th Wettest	Driest since: 1984 Wettest since: 2019	1984 1954
Jul-Sep 2020 3-Month	4.58" (116.33mm)	10.92" (277.37mm)	-6.34" (-161.04mm)	1st Driest 126th Wettest	Driest to Date Wettest since: 2019	2020 1954
Jun-Sep 2020 4-Month	7.42" (188.47mm)	14.24" (361.70mm)	-6.82" (-173.23mm)	2nd Driest 125th Wettest	Driest since: 1957 Wettest since: 2019	1957 1938
May-Sep 2020 5-Month	10.60" (269.24mm)	17.68" (449.07mm)	-7.08" (-179.83mm)	3rd Driest 124th Wettest	Driest since: 1964 Wettest since: 2019	1957 1938
Apr-Sep 2020 6-Month	16.00" (406.40mm)	21.75" (552.45mm)	-5.75" (-146.05mm)	6th Driest 121st Wettest	Driest since: 1968 Wettest since: 2019	1957 1938

Reference: NOAA National Centers for Environmental information, Climate at a Glance: Divisional Time Series, published October 2020, retrieved on October 15, 2020 from <https://www.ncdc.noaa.gov/cag/>



## Rankings for hottest period on record for Rhode Island:

The 4-month period from June through September was the warmest on record.

### Rhode Island, Climate Division 1. Rhode Island (Entire State)

Average Temperature Rankings, September 2020

Download: [XML](#)  

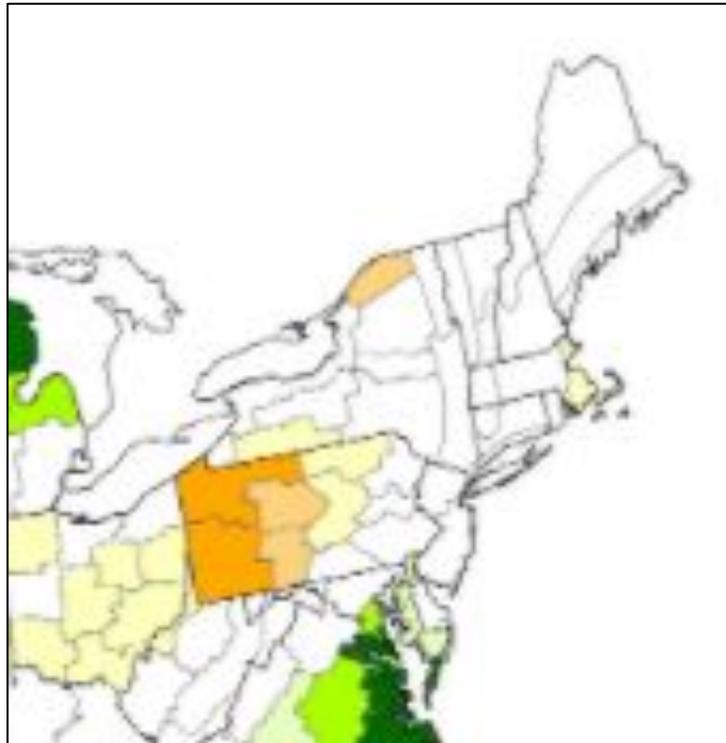
View Period (Months): [All](#) 1 2 3 4 5 6 7 8 9 10 11 12 18 24 36 48 60

Record Coolest		Bottom 1/10		Bottom 1/3		Normal		Top 1/3		Top 1/10		Record Warmest	
PERIOD	VALUE	1901-2000 MEAN	ANOMALY	RANK (1895-2020)	WARMEST/COOLEST SINCE	RECORD							
September 2020 1-Month	64.5°F (18.1°C)	61.9°F (16.6°C)	2.6°F (1.5°C)	107th Coolest	Coolest since: 2019	1917							
				20th Warmest	Warmest since: 2018	2015							
<i>Ties: 2003</i>													
Aug-Sep 2020 2-Month	69.1°F (20.6°C)	65.3°F (18.5°C)	3.8°F (2.1°C)	122nd Coolest	Coolest since: 2019	1903							
				5th Warmest	Warmest since: 2018	2018							
<i>Ties: 2002</i>													
Jul-Sep 2020 3-Month	71.2°F (21.8°C)	66.9°F (19.4°C)	4.3°F (2.4°C)	124th Coolest	Coolest since: 2019	1902, 1903, 1962							
				3rd Warmest	Warmest since: 2018	2018							
<b>Jun-Sep 2020 4-Month</b>	<b>70.4°F (21.3°C)</b>	<b>66.3°F (19.1°C)</b>	<b>4.1°F (2.2°C)</b>	126th Coolest	Coolest since: 2019	1903							
				<b>1st Warmest</b>	<b>Warmest to Date</b>	<b>2020</b>							
May-Sep 2020 5-Month	67.7°F (19.8°C)	64.3°F (17.9°C)	3.4°F (1.9°C)	123rd Coolest	Coolest since: 2019	1903, 1907							
				4th Warmest	Warmest since: 2018	2018							
Apr-Sep 2020 6-Month	63.7°F (17.6°C)	61.2°F (16.2°C)	2.5°F (1.4°C)	118th Coolest	Coolest since: 2019	1907							
				9th Warmest	Warmest since: 2019	2010							

Reference: NOAA National Centers for Environmental information, Climate at a Glance: Divisional Time Series, published October 2020, retrieved on October 15, 2020 from <https://www.ncdc.noaa.gov/cag/>



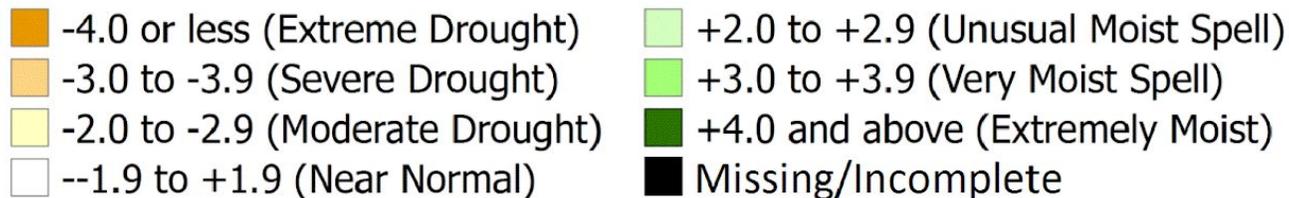
# Palmer Drought Index



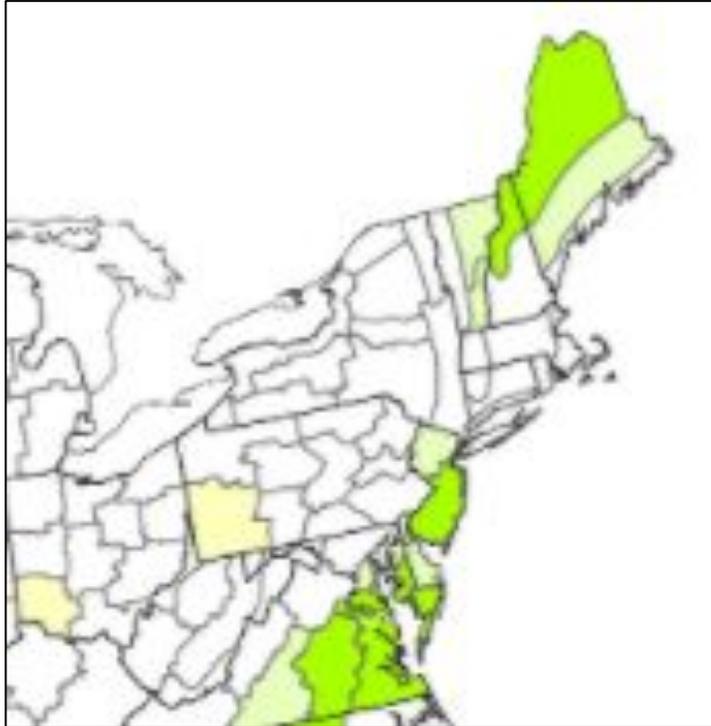
PDSI for RI: -1.86 (Prelim)  
Near Normal

Corresponding Drought  
Phase for this Index:

*Normal*



# Crop Moisture Index



CMI for RI: -0.36

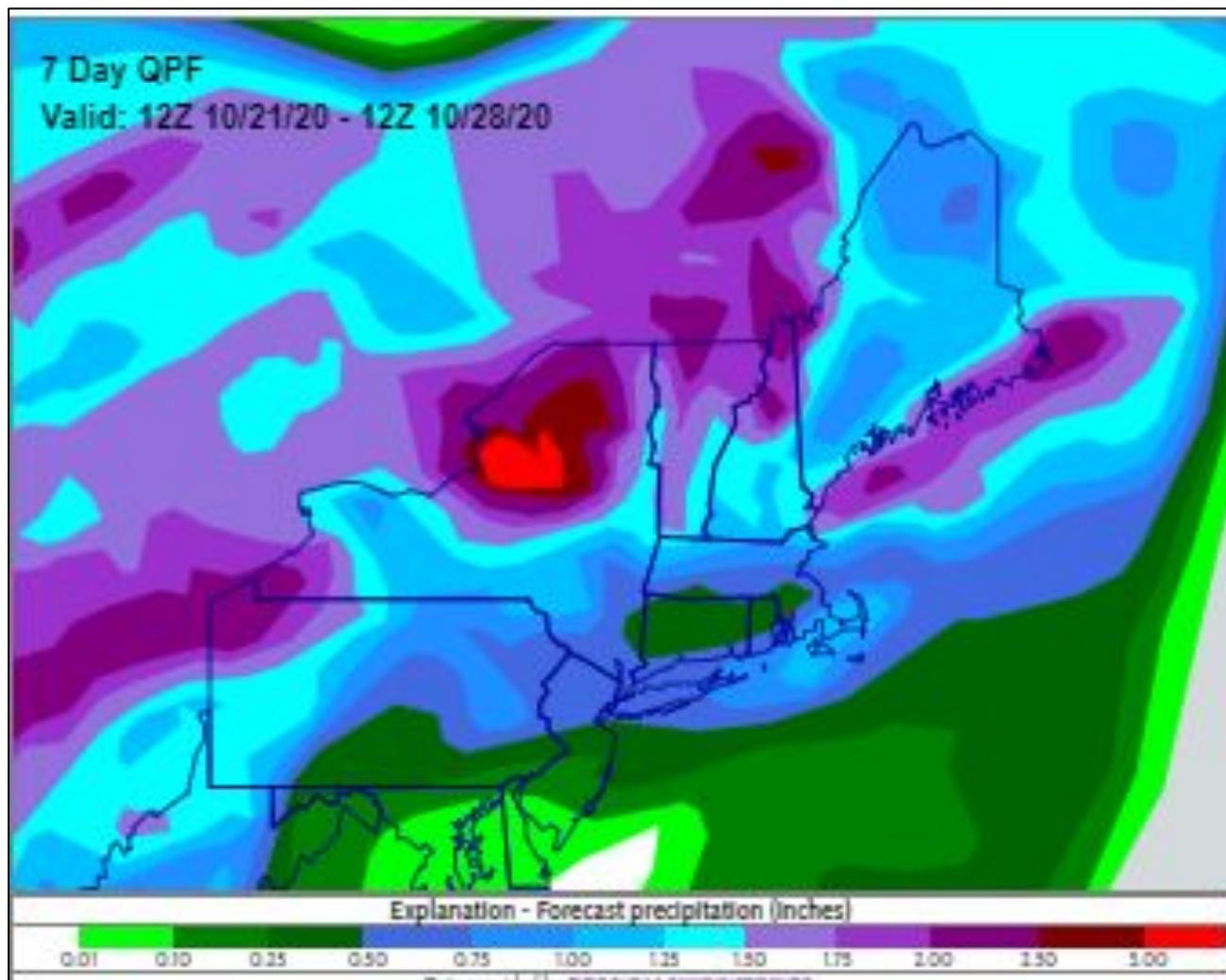
Slightly Dry

Corresponding Drought  
Phase for this Index:

*Normal*



# Rainfall Forecast Through 8 am Monday 10/26

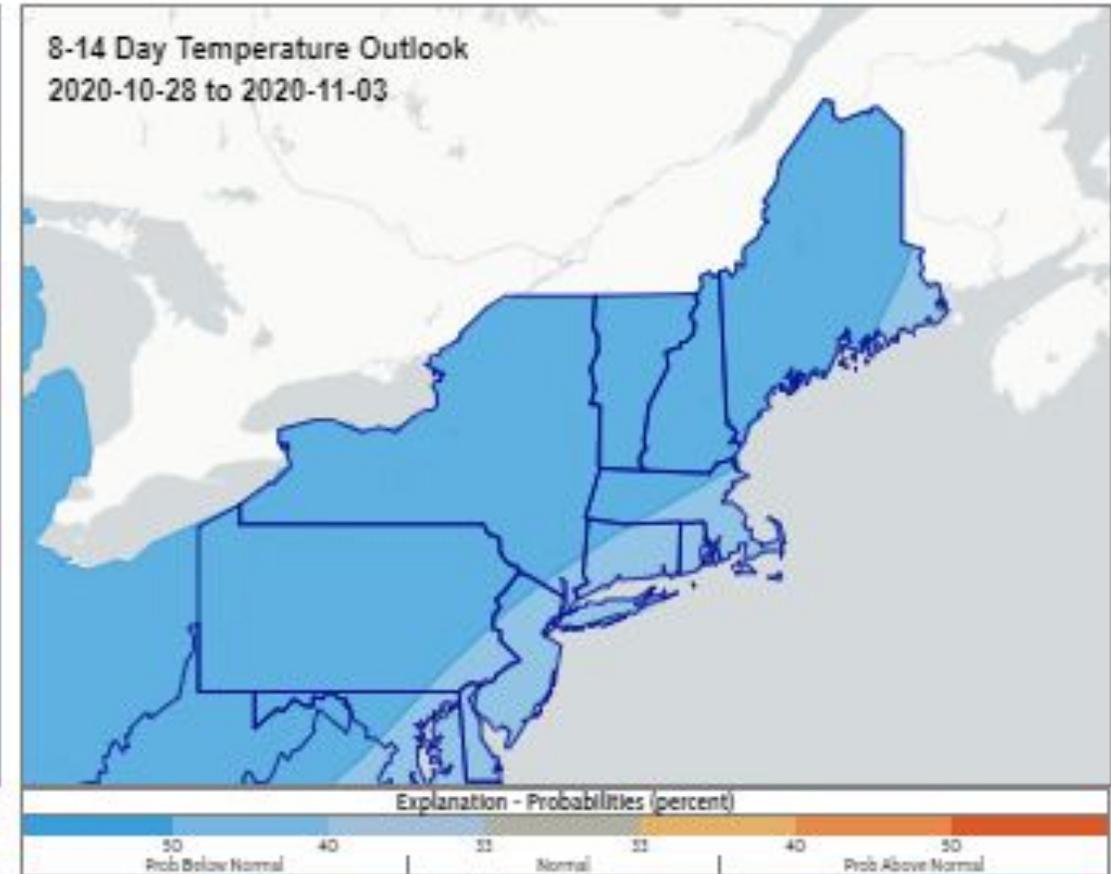
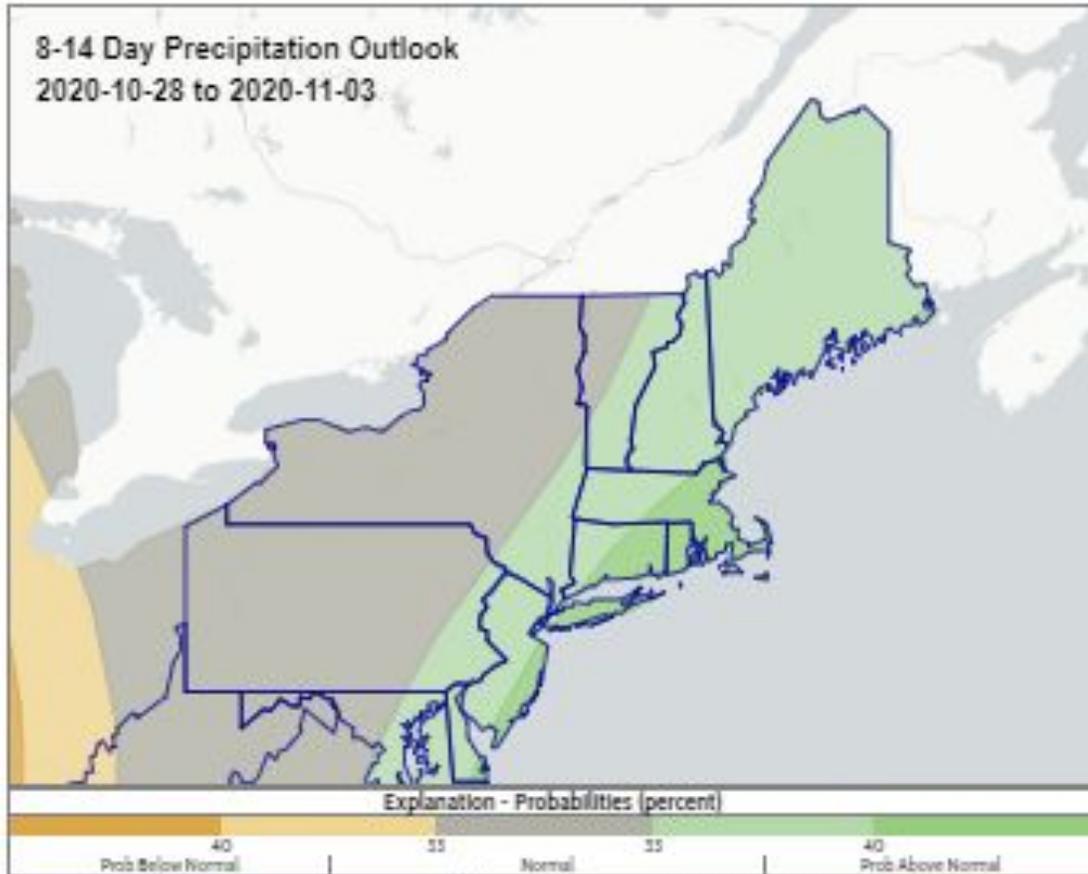


**Rainfall is expected to average between 0.25" and 0.75" through next Wednesday (October 28).**

**Most of this should fall early next week (Monday-Tuesday).**

**More substantial rainfall is forecast to remain closer to the Great Lakes.**

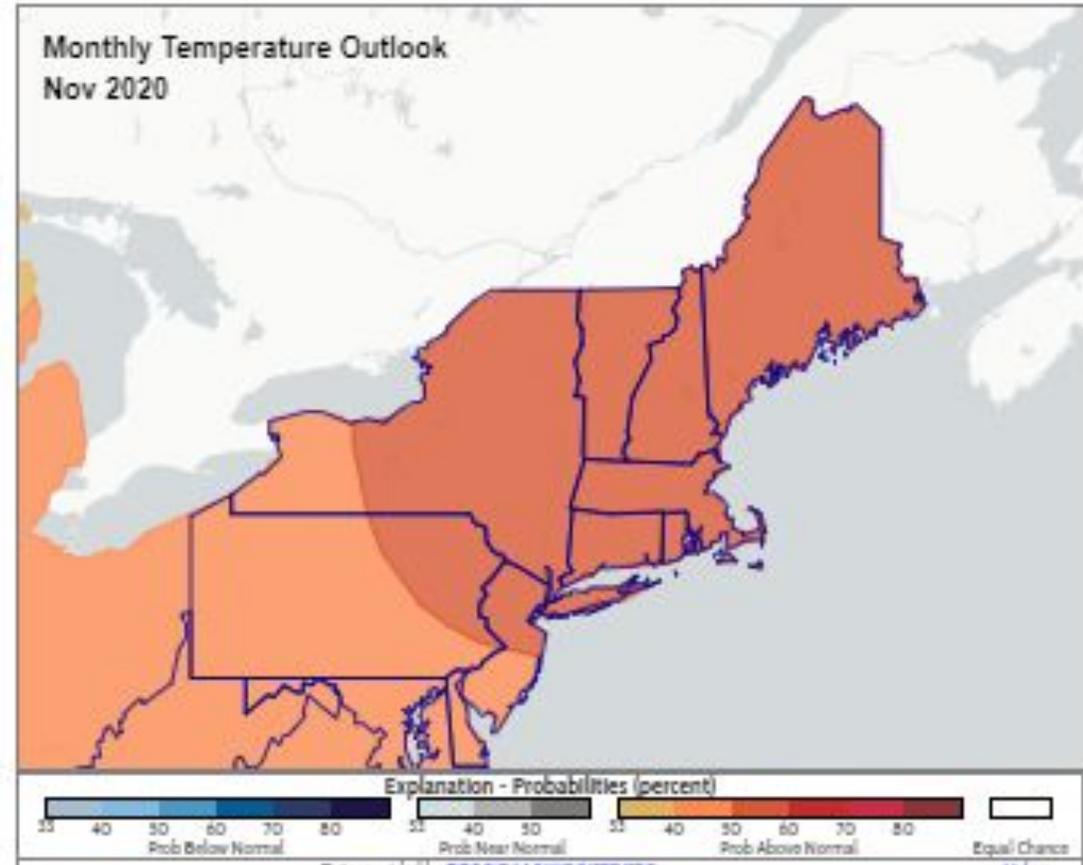
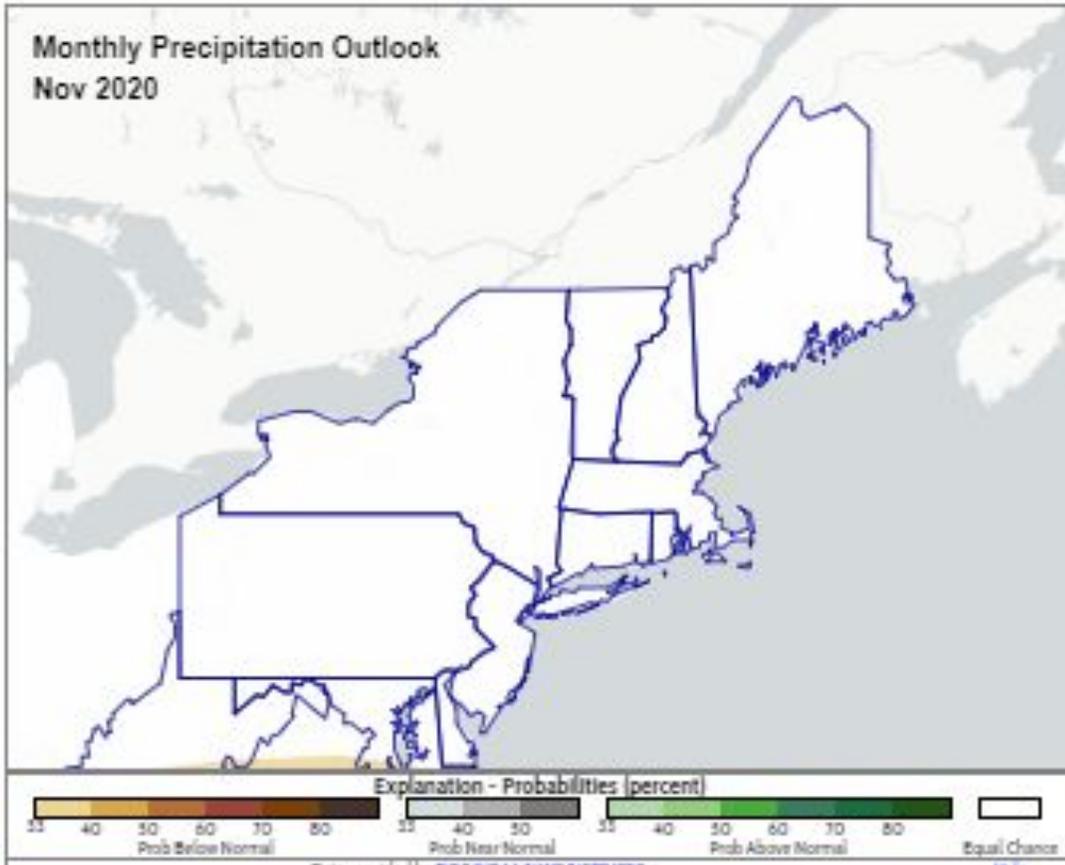
# Outlook for Oct 28 - Nov 3, 2020



Odds favor a good chance of above average rainfall and a low chance of colder than average temperatures.

Average Rainfall: 0.95"  
Average High/Low: 58/39

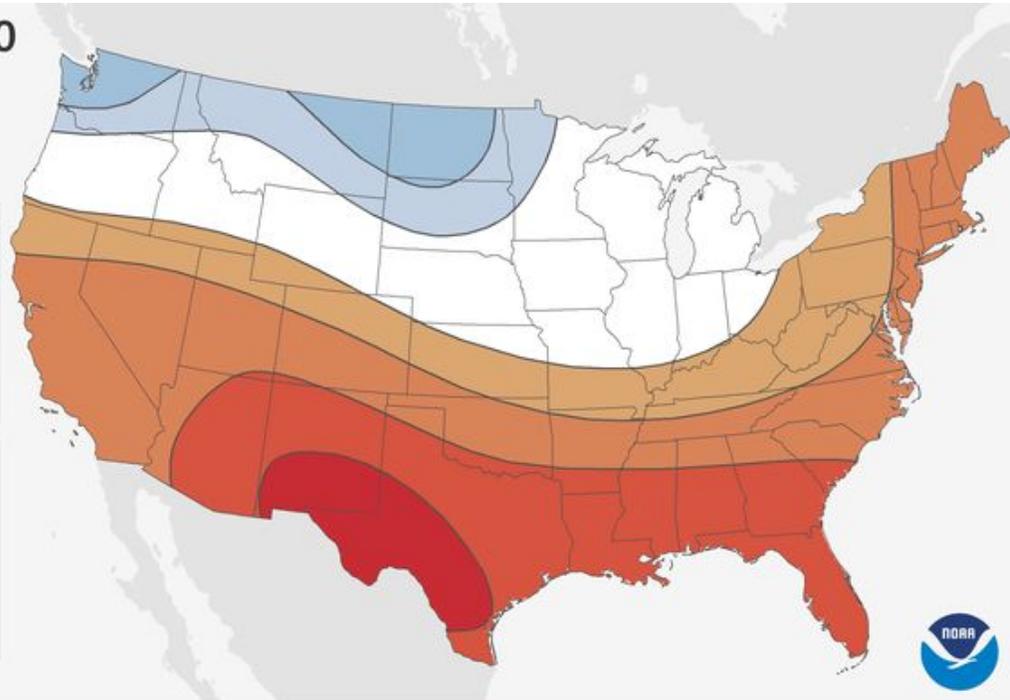
# 1 Month Outlook- November 2020



Odds favor a good chance of warmer than average temperatures but there are no clear signals for above, average, or below average precipitation.

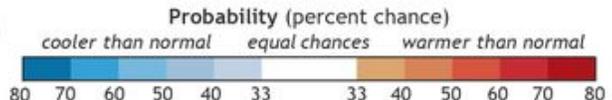
# Released Oct 15: Winter Outlook (Dec/Jan/Feb)

Winter 2020  
U.S.  
Temperature  
Outlook



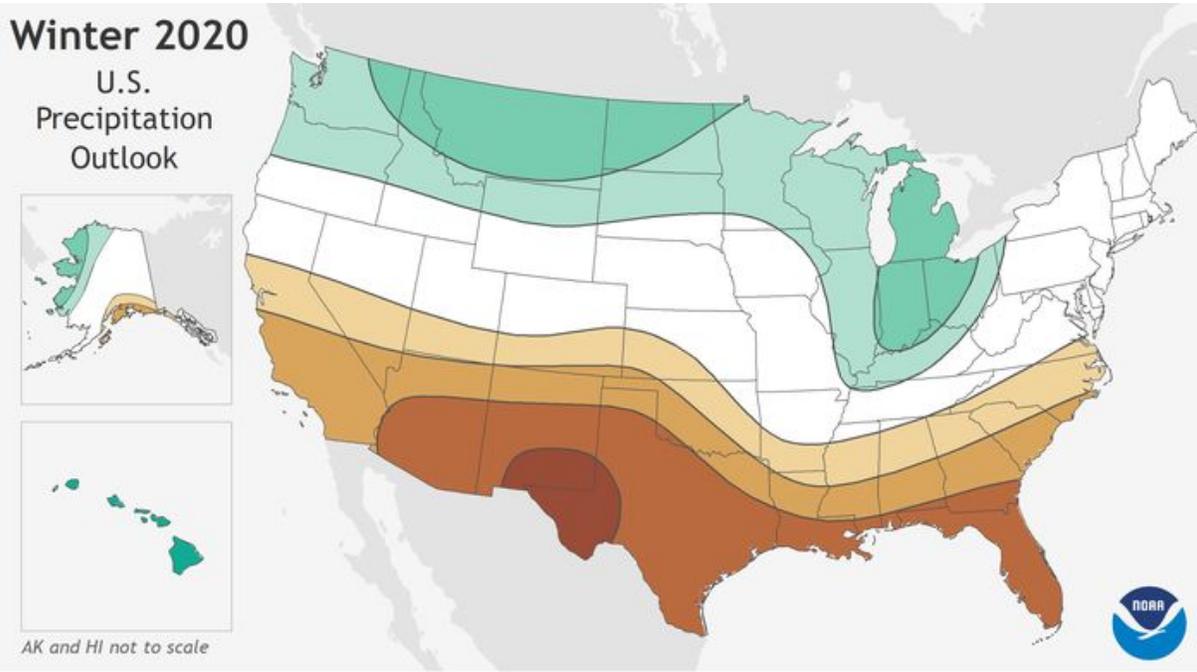
AK and HI not to scale

Temperature Outlook  
for December 2020 - February 2021  
Issued 15 October 2020



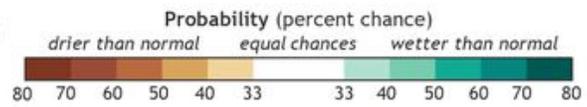
NWS Climate Prediction Center  
Map by NOAA Climate.gov

Winter 2020  
U.S.  
Precipitation  
Outlook



AK and HI not to scale

Precipitation Outlook  
for December 2020 - February 2021  
Issued 15 October 2020



NWS Climate Prediction Center  
Map by NOAA Climate.gov

**Odds favor a high chance of warmer than average temperatures but there are no clear signals for above, average, or below average precipitation.**